about maladjustment of their prosthesis (too large socket). Peak pressure parameters were related differently to pain and wounds; depending on the considered area (femur extremity and ischial ramus were less tolerant to high pressure than mid-height stump area).

Discussion.– New interesting pressure parameters allowed us to better qualify the interaction between patients and their prosthesis. Nevertheless, these new pressure parameters need to be further validated in more patients before being clinically relevant.

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Use of near-infrared spectroscopy (NIRS) in the evaluation of tissular oxygenation of under knee limb amputation from arteriopathy

J.L. Barnay*, C. Joussain, C. Orta, B. Tourlonias, D. Laroche, M.D. Morard, V. Gremeaux, J.M. Casillas

CHU de Dijon, Schoelcher, France

*Corresponding author.

Keywords: NIRS; TCPO2; Stump; Oxygenation

Objectives.– The aim of this work was to investigate feasibility of NIRS application and its reliability for investigation of tissue oxygenation in amputee in comparison of the Gold-standard TcPO2. It was about patients from regular prosthesis consultation at Dijon's University Hospital from May to September 2013.

Methods.– The method was two repeated examination with both NIRS et TcPO2 in two position in dorsal decubitus position with 0° limb elevation then with 30° elevation. The repetition was after one-hour rest.

Results.– The result of this study shows good reproducibility of both tools, ICC = 0.7 for TSI from NIRS on 30° elevation and 0.74 for TcPO2 with no elevation. We observe a correlation in fair result of oxygenation with NIRS and best comparative performance in functional test as Two-Minute-Walk test.

Discussion.– The NIRS seems to be a useful tool in functional and objective assessment for tissue oxygenation of limb. It appears to be easy-use tool but it needs more investigation to determine edge and standards in results from amputee in different situations, stabilized and pathologic ones, and its prognostic use.

Further reading

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Sat-pro questionnaire and locomotor scales summary

M. Timsit

Clinique de Provence-Bourbonne, Aubagne, France

Keywords: Sat-pro questionnaire; Houghton scale; PPA-LCI

Objectives.– Highlight the link between Locomotor scales (Houghton scale and Lci) and the feedback questionnaire concerning the prosthesis (sat-pro). Refine the Sat-pro questions in order to identify the most important questions to be asked.

Methods.– Transversal study with 54 patients answering the Houghton Scale, Lci and Sat-pro questionnaires. Fitting of permanent device for at least 2 months. Non-parametric statistics and correlation coefficient.

Results.– Age, sex, locomotor scales are correlated to Sat-pro. Three out of 15 Sat-pro questions are more relevant in the elderly.

Discussion.– The Sat-pro questionnaire is an essential component of the amputee patients follow-up, there are 3 questions to be asked to the elderly in the very first place, which allow simplifying patient follow-up but it will need to be confirmed by other studies.

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Balance ability as a determinant in a prognostic clinical prediction rule for successful prosthetic functional use after leg amputation

C. Wong

Columbia University, New York, USA

Keywords: Amputation; Balance ability; Berg Balance Scale; Prosthetic function; Prosthetics

Objectives.– Successful prosthetic function depends on balance ability, which the Berg Balance Scale (BBS) measures with excellent reliability and validity. Performance on individual BBS tasks differs between successful and unsuccessful prosthetic users. This longitudinal cohort study used clinical and self-report data including BBS to develop a prognostic clinical prediction rule (CPR) for prosthetic function in community-dwelling adults with leg amputations.

Methods.– Subjects self-reported medical history and prosthetic functional use (Houghton) and were assessed with BBS. One-year follow-up Houghton was obtained by phone. Multivariate logistic regression with bootstrapping, receiver-operating-curves, cut-points, and probability statistics were used in CPR development.

Results.– Follow-up rate was 67% ($n = 36$) with mean age 58.2, 5.7 years post-amputation, 94% unilateral, 71% vascular, 65% transtibial, and 90% prosthesis-users. The CPR predicted prosthetic success with excellent accuracy using 4 criteria: initial Houghton and 3 balance task scores: standing-eyes-closed, looking-back-over-shoulder, and turning-360-degrees. Failure in ≥ 2 criteria predicts unsuccessful use for $\geq 90\%$.

Discussion.– Unsuccessful prosthetic functional use after 1 year was largely predicted by scores on 3 BBS tasks and initial Houghton. Clinical screening with the CPR provides accurate 1-year prognoses for successful prosthetic functional use in heterogeneous samples of people with leg amputation and may identify those that need additional care.

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Osseo-integration for rehabilitation of amputees

M. Bertrand*, R. Brannemark

Clinique Saint-Roch, Montpellier Cedex 2, France

*Corresponding author.

Keywords: Osseo-integration; Amputees; Prothesis

Background.– Osseo-integration was developed by Professor Per-Ingvar Brånemark in Gothenburg. Osseo-integration involves direct contact between a titanium implant and bone tissue of living. The progress of this technique and its evolution helped adapt the concept of osseo-integration to amputees.

Methods.– R. Brannemark has developed technology in the OPRA protocol: protocol for the rehabilitation of amputees. The implant is surgically inserted in the bone cut. After about 6 months, a connection piece is mounted on the implant. The prosthesis patient will then set the room. The prosthesis is no longer in contact with the skin but with the bone.

Results.– The treatment is performed by a team of orthopedic surgeons, physiotherapists and technicians. The OPRA implant system is primarily intended to be used in all amputations of upper and lower limbs, particularly when the stump is difficult to sail (short stump, skin problems) Montpellier since 2007, 17 patients were operated on by this technique.

Discussion.– The osseo-integration of implants is a method of treating avant-garde. It improves the quality of life of patients, provides comfort and indolence.

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